REMARKS

The applicant has canceled claims 1-64.

Examiner provisionally rejected some of the canceled claims in view of applicant's co-pending application nos. 10/155,358 and 09/933,862. New independent claim 65 includes the limitations of "identifying said start time by: (i) identifying sequential image frames of said video having an upper spatial region being substantially darker than a lower spatial region of said frame wherein said lower spatial region comprises, at least in part, a pair of regions having a dominant color description representative of skin tone; (ii) binarizing said image frames by identifying pixels representative of skin tone and pixels not representative of skin tone; (iii) projecting the binarized said image frames along at least one of a vertical and a horizontal axis; and (iv) analyzing the projected said binarized images for each of a plurality of said sequential frames." Each of the remaining claims depends from independent claim 65. The applicant submits that none of these quoted limitations are obvious in view of applicant's co-pending applications, hence the applicant respectfully requests that the Examiner withdraw the provisional double patenting rejection.

The Examiner rejected claims 11, 18, 22, 27, 31, 34-36, and 39 under 35 U.S.C. § 112, second paragraph. Each of these claims has been canceled.

The Examiner rejected claims 1, 7, 11, 18, 22, 27, 31, 35, 36, 39, 42, and 45 under 35 U.S.C. § 101. Each of these claims has been canceled. The applicant notes that new independent claim 65 includes limitations of: (1) "identifying a plurality of segments of said video . . . *where each of said segments includes a plurality of frames of said video;*" (2) "identifying said start time by . . . binarizing said image frames by identifying pixels representative of skin tone and pixels not representative of skin tone [and] projecting the binarized said image frames along at least one of a vertical and a horizontal axis;" and (3) "creating a summarization of said video comprising *said* plurality of segments." (emphasis added). The second and third of these recited limitations cannot be done simply in a person's mind. First, no person would be capable of classifying, on a pixel-by-pixel basis, individual pixels as either skin tone or not skin tone, then

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binarizing the image and projecting the binarized image along either a vertical or horizontal axis, all in the person's mind. The applicant further notes that, to the extent that *a person is visually looking at* a sequential series individual frames of video, as the Examiner seems to argue, the start and end times of a sumo bout would simply be identified instantly by the person who could visually interpret the frames in their entirety; the second recited limitation would be nonsensical to a person *actually looking at* the frame.

Second, the third recited limitation - "creating a summarization of said video comprising *said* plurality of segments" - cannot exist in a person's mind. The Examiner posits that a person could watch and remember memorable segments and "combine the segments he remembers to form a mental summarization of the video." The applicant respectfully reminds the Examiner that the terminology actually recited in the claims do not read on a "mental summarization." The claims specifically recite that the summarization must include "*said* plurality of segments" where "each of said segments *includes a plurality of frames of said video*." A "frame of a video" cannot exist in a person's mind. Even if a person were to look specifically at each individual frame, and in slow motion, the person at best would retain the *memory* of what the frame of video *looked like*, but not the frame itself. This is true whether or not the frame of video is digitally recorded in a computer-readable medium or recorded on film or otherwise. Therefore, each of new claims 65-82 are directed to statutory subject matter.

The Examiner rejected canceled claims 1-42, 45, and 61 under 35 U.S.C. § 103(a) as being obvious in view of Kawashima et al. Kawashima discloses a specific method of identifying pitching/batting sequences in a baseball game and including those sequences in an indexed summary available for browsing by a user. The Examiner's argument assumes that the method disclosed by Kawashima could be easily modified to similarly summarize video of a sumo match or tournament. In a prior office action, the applicant individually identified technical steps utilized in the method of Kawashima that would not be effective in identifying "plays" of a sumo match. Specifically, Kawashima discloses on pp. 872—873 that the beginning of play segments to be indexed and summarized are detected using a minimal warp function where input video sequences are compared to reference sequences of pitching/batting segments, in order to detect motion vectors characteristic of a baseball being pitched and/or a bat being swung. Once such a

segment start is identified, the segment end is determined by an analysis of scene characteristics after a cut, e.g. if the next scene after a cut indicates a view of the field, it is assumed that the ball has been hit and the play continues. The applicant further noted that *the Kawashima reference itself* disclosed that the method disclosed therein was *ineffective* in the circumstance where the identification of the start of a play depended upon detecting the motion of an object against a similarly colored background – precisely the circumstance at issue in the present application and which the present inventors also identified as an obstacle to overcome. *See* Kawashima at p. 874, 1st paragraph and p. 873 lines 4-7; Specification at p. 10 lines 23-25. Therefore, the present inventors were forced to develop more complex techniques for detecting the initial charge of the Sumo wrestlers. *See, e.g.* specification at p. 10 lines 28-30 (detecting a single blob for each participant); *Id.* at p. 10 line 32 to p. 11 line27 (describing a one-dimensional projection method).

Thus, given that the play detection method of Kawashima relies upon a purely mathematical calculation of the fraction of moving pixels in a region, and isn't sufficiently robust to withstand the minor scene variance of a batter using a colored bat, one of ordinary skill in the art would not have a reasonable expectation that the disclosed method could *predictably* be used in other sports. *See, e.g.* MPEP § 2143.02 (stating that predictability is a requirement for a showing of a reasonable expectation of success). Lacking that predictability, the Examiner's obviousness rejection based on Kawashima should not be sustained.

The Examiner's response, to applicant's specific arguments as to why the method of Kawashima would not be expected to work in identifying plays of sumo, was to (1) simply assert that sumo and baseball are sporting events, hence it would be obvious to use Kawashima's method of detecting baseball pays to detect sumo plays and (2) argue that, because the Examiner reads the claims so broadly as to be accomplished mentally, Kawashima's motion detection method would in essence be used in that mental summarization. The first of these arguments fails to address the point raised by the applicant, i.e. that Kawashima's method cannot be assumed to work in sports besides baseball, and specifically in Sumo where skin tone must be distinguished from a similarly-colored stage. The second of these arguments, being dependent upon the Examiner's erroneous assumption that the claims read on a "mental summarization" is also improper.

Nonetheless, the applicant has added additional limitations in new independent claim 65, not present in the rejected and canceled claims. These limitations include the steps of "(i) identifying sequential image frames of said video having an upper spatial region being substantially darker than a lower spatial region of said frame wherein said lower spatial region comprises, at least in part, a pair of regions having a dominant color description representative of skin tone; (ii) binarizing said image frames by identifying pixels representative of skin tone and pixels not representative of skin tone; (iii) projecting the binarized said image frames along at least one of a vertical and a horizontal axis; and (iv) analyzing the projected said binarized images for each of a plurality of said sequential frames." None of these limitations are disclosed by, or obvious in view of, the method disclosed by Kawashima. Therefore, the applicant respectfully requests that claims 65-82 be allowed

In view of the foregoing amendments and remarks, the applicant respectfully requests reconsideration and allowance of claims 65-82.

Respectfully submitted,

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